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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/615,168 07/13/00 WHITE

D 5869-2

EXAMINER

WM02/1011

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TRAN.C	
ART UNIT	PAPER NUMBER

2644

DATE MAILED:

10/11/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

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Office Action Summary

Application No.

09/615,168

Applicant(s)

WHITE, DONALD R.

Examiner

Con P Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) **Sub** 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 3, 12, 13, 14, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Carme et al. (Carme; U.S. Patent No. 4,833, 719).

Regarding claim 1, Carme et al. teach an audio headset (see Fig. 1 and 2) comprising:

a first ear piece (i.e. muff) (1d) having a microphone (8) for converting an audio input into electrical transmit signals; and

a second ear piece (i.e. muff) (1g) having an ear phone (i.e. loudspeaker) (6) for converting electrical receive signals into an audio output.

Regarding claim 2, Carme et al. teach an audio headset including a microphone (8) that is placed in the first external ear duct (3). It should be noted that the air surrounding the microphone would be inherent an acoustical isolator which isolates the microphone from audio signals attributed to bone conduction.

Regarding claim 3, Carme et al. teach an audio headset (see Fig. 2) including a microphone (8) that is placed in the external ear duct (3). It should be noted that the air

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surrounding the microphone would be inherent an acoustical isolator having the air content surrounding sides and a back portion of the microphone.

Regarding claim 12, Carme et al. teach (see Fig. 1) the first ear piece (1d) and the second ear piece (1g), each ear piece is replace by an earplug (see col. 5, lines 7-9). Each earplug has a housing in which the housing adapted to insert within an external ear canal of a user (see col. 5, lines 7-13). The microphone then positioned in the houses (see col.7, lines 49-50) for converting voice signals from the user into the transmit signals (see col. 7, lines 6-7).

Regarding claim 13, Carme et al. teach a method for operating a headset as following:

adapting the first ear piece (1d) receiving audio signals from a user while located within a first ear of the user; then converting the received audio signals from the first ear piece (see Fig. 3) into transmit signals for outputting (see col. 5, line 54-57) to a first connector (B)

adapting the second ear piece (1g) receiving receive signals from a second connector (A) while located within a second ear piece of the user; and outputting the received signals through a transducer (6) in the second ear piece into the second ear of the user (col. 5, line 47-48).

Regarding claim 14, Carme et al. teach a method to use air for acoustically isolating the microphone (8) in the first ear piece (1d) from audio signals attributed to bone conduction by locating the microphone in the external ear duct (3).

Regarding claim 21, Carme et al. teach a method of operating a headset by

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inserting the first ear piece (1d) and the second ear piece (1g) into the opposite entrance to each external ear duct (see col. 5, lines 7-13). Carme et al. also teach a method of operating a headset by positioning the microphone in the earplug (col. 5, lines 54-57) converting voice signals within the inserted external canal into the transmit signals (see col. 6, lines 16-17).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5, 6, 7, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carme et al.

Regarding to claims 5, 6, and 7, Carme et al. teach an audio headset (see Fig. 3) including: a first wire coupled from the microphone to a first connection for outputting the transmit signals (8 and B), a second wire coupled from the earphone to a second connection for receiving the receive signals (6 and A). However, the reference does not explicitly disclose the grounding wire as a third wire.

Nevertheless, as would have been well known to one of ordinary skill in the art at the time the invention was made, such grounding wire is required in order to transmit and receive the audio signals. Accordingly, it would have been obvious to one of

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ordinary skill in the art to have included a third wire for coupling the microphone and the earphone to a ground connection in order to make the headset works properly.

Moreover, with respect to claim 6, it would have been obvious to have the first, second and third wires are contained within a single flexible cord since such a modification would have increased the wires strength and would have saved space. Also with respect to claim 7, it would have been obvious to one of ordinary skill in the art to have a standard plug, such as a stereo sound plug connector, having two hot wires and one ground wire separately connected in order to connect and disconnect easily.

5. Claims 4, 8, 9, 10, 15, 18, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carme et al. in view of Lazarus et al. (Lazarus; U.S. Patent No. 4,280,018).

Regarding to claims 4 and 8, Carme et al. teach an audio headset (see Fig. 2) including a microphone (8) that is placed in the external ear duct (3) . Moreover, Carme et al. further teach the microphone generating the electrical transmit signals (see col. 7, lines 6-7) from the audio input of the user detected in the external ear canal (see col. 7, lines 48-51). However, Carme et al. do not explicitly suggest the microphone is a piezoelectric transducer. Lazarus et al. teach (see Fig. 1) the piezoelectric transducers (10) have been used to produce electrical transmit signals (see col. 1, lines 5-15) from the audio input signals (see line 1, Abstract) because they are small and light.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to include a piezoelectric transducer in the microphone

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locating in an external ear canal of a user in order to generate the electrical transmit signals from the audio input signals because of its high sensitivity and a relatively small dimensions.

Regarding to claim 9, Lazarus et al. also teach the transducer including a FET transistor in order to provide impedance matching. In Fig. 1, the transistor (Q1) having a first gating terminal coupled to a first terminal (18) of the transducer (12), a second output terminal (D) for outputting the transmit signal, and a third terminal (S) for coupling to a ground connection.

Regarding to claim 10, Lazarus et al. further teach the transducer including a filter circuit (see col. 2, lines 45-48) in order to isolates the AC signal on the cable from the drain.

Regarding to claim 15, Carme et al. teach a first ear piece (1d) of an audio headset including a microphone (8). Moreover, Carme et al. further teach the microphone generating a electrical transmit signals (see col. 7, lines 6-7). However, Carme et al. do not explicitly suggest a method for generating the electrical transmit signals. Lazarus et al. teach (see Fig. 1) the piezoelectric sound transducers (10 and see line 1, Abstract) have been used in order to produce electrical transmit signals (see col.1, lines 5-15) since they are small and light.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to use a piezoelectric transducer in the first ear, in order to generate the electrical transmit signals because of its high sensitivity, light weight and a relatively small dimensions.

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With respect to claim 18, Lazarus et al. also disclose the method of using an output of a piezoelectric transducer for generating the transmit signals (col. 1, lines 25-26). Piezoelectric transducers have been well known because the use of the piezoelectric transducer confers robustness good transient response and freedom from solid borne noise. Accordingly, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to use an output of a piezoelectric transducer for generating the transmit signals because such modification would have achieved the high quality signals.

With respect to claim 19, Lazarus et al. also teach the method of using the transmit signal output from the piezoelectric transducer for controlling a field-effect-transistor (FET) (see col. 1, lines 60-61) output (see col. 2, lines 59-61) and using the transistor output as the transmit signals (col. 2, lines 61-63) since the FET has been known for its high input impedance.

With respect to claim 20, Lazarus et al. further teach the a method of filtering out low audio frequencies by using an RC filter circuit (see col. 2, lines 45-48) in order to isolates the AC signal on the cable from the drain.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carme et al. in view of Kruger (Kruger ;U.S. Patent No. 5,692,059).

Regarding claim 11, Carme et al. teach an audio headset (see Fig. 1 and Fig. 2) comprising:

a first ear piece (i.e. muff) (1d) having a microphone (8) for converting an audio input into electrical transmit signals; and

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a second ear piece (i.e. muff) (1g) having an ear phone (i.e. loudspeaker) (6) for converting electrical receive signals into an audio output.

However, Carme et al. do not explicitly suggest the electret microphone. Kruger teaches an in-the-ear microphone system (see Fig. 2) comprising an electret microphone (18) which is an airborne sensing transducer (see col. 5, lines 23-23) located in the housing (10) in form of an earplug (see col. 5, line 8).

Accordingly, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to modify an audio headset wherein the microphone comprises an electret since such modification would have achieved a frequency response that emphasizes a higher speech frequencies as suggested by Kruger in column 5, lines 39-41.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure .

Sear et al. U.S. Patent No.4,156,800 disclose piezoelectric transducer.

Carlson et al. U.S. Patent No. 5,335,286 disclose electret assembly.

Rosenthal U.S. Patent No. 4,696,045 discloses ear microphone.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Con P. Tran whose telephone number is 703-305-2341. The examiner can normally be reached on M-F (8:30-5:00).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

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